



E-Learning, DC drives

**DCS800**

**Hardware D5 – D7, part 1**

**G569e\_a\_b Part 1**

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HARDWARE\_D5-D7\_01R0301

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Welcome to the Hardware D5 to D7 training module for the DCS800, ABB DC Drives.

If you need help navigating this module, please click the Help button in the top right-hand corner. To view the presenter notes as text, please click the Notes button in the bottom right corner.

# Objectives

## **This training module covers:**

- Rating of DCS800 modules
- Components of a D5 module
- Components of a D6 module
- Components of a D7 module
- Function of PIN-51 board

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- Rating of DCS800 modules
- Components of a D5 module
- Components of a D6 module
- Components of a D7 module
- Function of a PIN-51 board

## Ratings, types and voltages

### Overview for module sizes D5 to D7

| Unit size | 2-Q<br>rated Current<br>DCS800-S01<br>$I_{DC}$ [A] | 4-Q<br>rated Current<br>DCS800-S02<br>$I_{DC}$ [A] | Supply voltage<br>[V <sub>AC</sub> ] |     |                |                |     |     |                | Weight<br>[kg] | Dimensions       |                       |
|-----------|--|--|--------------------------------------|-----|----------------|----------------|-----|-----|----------------|----------------|------------------|-----------------------|
|           |  |  | 400                                  | 525 | 600            | 690            | 800 | 990 | 1200           |                | h x w x d [mm]   | h x w x d [inch]      |
| D5        | 900  | 900  | ●                                    |     | ●              | ●              |     |     |                | 110            | 1050 x 510 x 410 | 41.50 x 20.25 x 16.25 |
|           | 1200   | 1200   | ●                                    | ●   | ●              | ●              |     |     |                |                |                  |                       |
|           | 1500   | 1500   | ●                                    | ●   | ●              | ●              |     |     |                |                |                  |                       |
|           | 2000   | 2000   | ●                                    | ●   | ● <sup>①</sup> | ● <sup>①</sup> |     |     |                |                |                  |                       |
| D6        | 1900   | 1900   |                                      | ●   | ●              | ●              | ●   |     |                | 180            | 1750 x 460 x 410 | 69.00 x 18.25 x 16.25 |
|           | 2050   | 2050   |                                      | ●   | ●              | ●              | ●   |     |                |                |                  |                       |
|           | 2500   | 2500   | ●                                    | ●   | ●              | ●              | ●   |     |                |                |                  |                       |
|           | 3000   | 3000   | ●                                    | ●   | ●              | ●              | ●   |     |                |                |                  |                       |
| D7        | 2050   | 2050   |                                      |     |                |                |     | ●   |                | 315            | 1750 x 760 x 570 | 69.00 x 30.00 x 22.50 |
|           | 2600   | 2600   |                                      |     |                |                |     | ●   | ● <sup>②</sup> |                |                  |                       |
|           | 3300   | 3300   | ●                                    | ●   | ●              | ●              | ●   | ●   | ● <sup>②</sup> |                |                  |                       |
|           | 4000   | 4000   | ●                                    | ●   | ●              | ●              | ●   | ●   |                |                |                  |                       |
|           | 4800   | 4800   |                                      |     | ●              | ●              | ●   |     |                |                |                  |                       |
|           | 5200   | 5200   | ●                                    | ●   |                |                |     |     |                |                |                  |                       |



① only available as 2-Q drive

② on request

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The modules size D5 to D7 have a current range from 900 ADC to 5200 ADC with standard supply voltages from 400 VAC to 1200 VAC.

This table shows detailed information about the converter modules:

- The converter module size is shown, then the rated current. Note, that the D5 modules for 2000 ADC with an incoming voltage of 600 VAC and 690 VAC are only available as 2-Q drives.

The available rated supply voltage is shown. Note, that the modules for 1200 VAC supply are only available on request.

- The next columns show the weight and dimensions of the modules.

## Current ratings for 2-Q and 4-Q modules

### Overview for module sizes D5 to D7

| Unit type<br>2-Q converters |                    |              | Unit type<br>4-Q converters |                       |                      | Int. field<br>current | Fan volt. | Air volume | P <sub>Loss</sub> | Frame size |       |    |
|-----------------------------|--------------------|--------------|-----------------------------|-----------------------|----------------------|-----------------------|-----------|------------|-------------------|------------|-------|----|
| IDC I                       | P <sub>out</sub> ④ |              | IDC I                       | P <sub>out</sub> ④    |                      |                       |           |            |                   |            |       |    |
| [A]                         | [kW]<br>400V       | [kW]<br>500V |                             | [A]                   | [kW]<br>400V<br>500V | [A]                   | [V AC]    | [m³/h]     | [kW]              |            |       |    |
| 400 V / 500 V / 525 V       |                    |              | 400V 500V                   |                       |                      |                       |           |            |                   |            |       |    |
| DCS800-S01-1200-04/05       | 1200               | 558          | 696                         | DCS800-S02-1200-04/05 | 1200                 | 498                   | 624       | 230; 1-ph  | 800               | 5.10       | D5    |    |
| DCS800-S01-1500-04/05       | 1500               | 698          | 870                         | DCS800-S02-1500-04/05 | 1500                 | 623                   | 780       |            | 25 ③              | 800        | 5.30  | D5 |
| DCS800-S01-2000-04/05       | 2000               | 930          | 1160                        | DCS800-S02-2000-04/05 | 2000                 | 830                   | 1040      |            | 25 ③              | 800        | 6.60  | D5 |
| DCS800-S01-2050-05          | 2050               | 953          | 1189                        | DCS800-S02-2050-05    | 2050                 | 851                   | 1066      | -          | 1600              | 8.00       | D6    |    |
| DCS800-S01-2500-04/05       | 2500               | 1163         | 1450                        | DCS800-S02-2500-04/05 | 2500                 | 1038                  | 1300      | -          | 400-500; 3-ph     | 1600       | 9.00  | D6 |
| DCS800-S01-3000-04/05       | 3000               | 1395         | 1740                        | DCS800-S02-3000-04/05 | 3000                 | 1245                  | 1560      | -          | 1600              | 11.10      | D6    |    |
| DCS800-S01-3300-04/05       | 3300               | 1535         | 1914                        | DCS800-S02-3300-04/05 | 3300                 | 1370                  | 1716      | -          | 4200              | 11.70      | D7    |    |
| DCS800-S01-4000-04/05       | 4000               | 1860         | 2320                        | DCS800-S02-4000-04/05 | 4000                 | 1660                  | 2080      | -          | 400/690; 3-ph     | 4200       | 13.00 | D7 |
| DCS800-S01-5200-04/05       | 5200               | 2418         | 3016                        | DCS800-S02-5200-04/05 | 5200                 | 2158                  | 2704      | -          | 4200              | 19.00      | D7    |    |
| 600 V / 690 V               |                    |              | 600V 690V                   |                       |                      |                       |           |            |                   |            |       |    |
| DCS800-S01-0900-06/07       | 900                | 630          | 720                         | DCS800-S02-0900-06/07 | 900                  | 563                   | 648       | 25 ③       | 800               | 5.10       | D5    |    |
| DCS800-S01-1500-06/07       | 1500               | 1050         | 1200                        | DCS800-S02-1500-06/07 | 1500                 | 938                   | 1080      | 25 ③       | 800               | 6.30       | D5    |    |
| DCS800-S01-2000-06/07       | 2000               | 1400         | 1600                        |                       |                      |                       |           | 25 ③       | 800               | 8.10       | D5    |    |
| DCS800-S01-2050-06/07       | 2050               | 1435         | 1640                        | DCS800-S02-2050-06/07 | 2050                 | 1281                  | 1476      | -          | 1600              | 9.20       | D6    |    |
| DCS800-S01-2500-06/07       | 2500               | 1750         | 2000                        | DCS800-S02-2500-06/07 | 2500                 | 1563                  | 1800      | -          | 1600              | 10.20      | D6    |    |
| DCS800-S01-3000-06/07       | 3000               | 2100         | 2400                        | DCS800-S02-3000-06/07 | 3000                 | 1875                  | 2160      | -          | 1600              | 12.20      | D6    |    |
| DCS800-S01-3300-06/07       | 3300               | 2310         | 2640                        | DCS800-S02-3300-06/07 | 3300                 | 2063                  | 2376      | -          | 4200              | 13.10      | D7    |    |
| DCS800-S01-4000-06/07       | 4000               | 2800         | 3200                        | DCS800-S02-4000-06/07 | 4000                 | 2500                  | 2880      | -          | 400/690; 3-ph     | 4200       | 15.10 | D7 |
| DCS800-S01-4800-06/07       | 4800               | 3360         | 3840                        | DCS800-S02-4800-06/07 | 4800                 | 3000                  | 3456      | -          | 4200              | 19.50      | D7    |    |
| 800 V                       |                    |              | 800V                        |                       |                      |                       |           |            |                   |            |       |    |
| DCS800-S01-1900-08          | 1900               | 1739         |                             | DCS800-S02-1900-08    | 1900                 | 1558                  |           | -          | 1600              | 9.00       | D6    |    |
| DCS800-S01-2500-08          | 2500               | 2288         |                             | DCS800-S02-2500-08    | 2500                 | 2050                  |           | -          | 400-500; 3-ph     | 1600       | 10.70 | D6 |
| DCS800-S01-3000-08          | 3000               | 2745         |                             | DCS800-S02-3000-08    | 3000                 | 2480                  |           | -          | 1600              | 12.70      | D6    |    |
| DCS800-S01-3300-08          | 3300               | 3020         |                             | DCS800-S02-3300-08    | 3300                 | 2706                  |           | -          | 4200              | 13.40      | D7    |    |
| DCS800-S01-4000-08          | 4000               | 3660         |                             | DCS800-S02-4000-08    | 4000                 | 3280                  |           | -          | 4200              | 15.60      | D7    |    |
| DCS800-S01-4800-08          | 4800               | 4392         |                             | DCS800-S02-4800-08    | 4800                 | 3936                  |           | -          | 4200              | 20.00      | D7    |    |
| 990 V                       |                    |              | 990V                        |                       |                      |                       |           |            |                   |            |       |    |
| DCS800-S01-2050-10          | 2050               | 2378         |                             | DCS800-S02-2050-10    | 2050                 | 2132                  |           | -          | 4200              | 9.70       | D7    |    |
| DCS800-S01-2600-10          | 2600               | 3016         |                             | DCS800-S02-2600-10    | 2600                 | 2704                  |           | -          | 4200              | 12.10      | D7    |    |
| DCS800-S01-3300-10          | 3300               | 3828         |                             | DCS800-S02-3300-10    | 3300                 | 3432                  |           | -          | 400/690; 3-ph     | 4200       | 16.60 | D7 |
| DCS800-S01-4000-10          | 4000               | 4640         |                             | DCS800-S02-4000-10    | 4000                 | 4160                  |           | -          | 4200              | 20.20      | D7    |    |
| 1200 V                      |                    |              | Data on request             |                       |                      |                       |           |            |                   |            |       |    |

③ FEX-425-Int field exciter is selectable via Plus code +S164

④ ratings for rated input voltage -10 %

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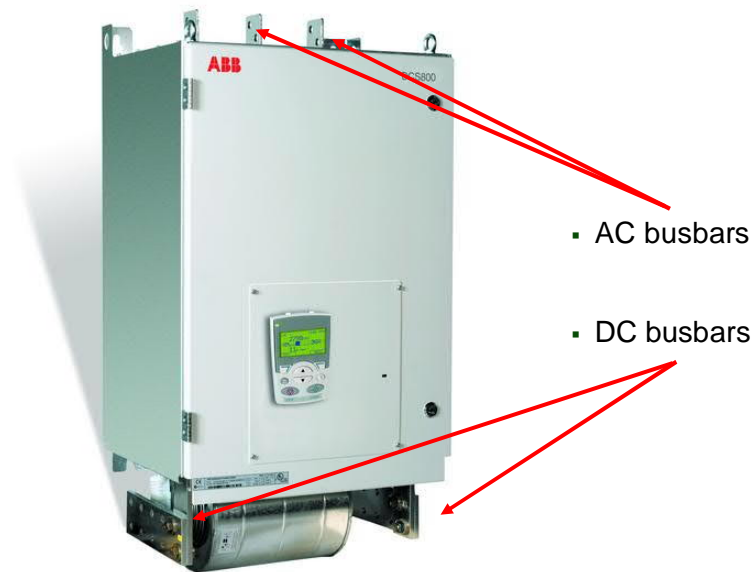


The current ratings for the 2-Q and 4-Q module sizes D5 to D7 with 50 Hz and 60 Hz supplies are given on this slide. The characteristics are based on an ambient temperature of maximal 40 degree Celsius and an elevation of maximal 1000 meters above sea level.

- The 1st column shows the unit type of the 2-Q modules.
- The 2nd column shows the rated DC current of the 2-Q modules. The AC current is 0.82 times DC current. The current sizing has to be done by motor current and load cycle. Please consult the DCS800 Hardware Manual or the sizing program drive size.
- The 3rd column shows the nominal power of the 2-Q modules.
- The 4th column shows the unit type of the 4-Q modules.
- The 5th column shows the rated DC current of the 4-Q modules.
- The 6th column shows the nominal power of the 4-Q modules.
- The 7th column shows the maximum field current provided by the internal field exciter of converter modules size D5. The internal field exciter is selectable via Plus code.
- The 8th column shows the needed fan voltage. Fans for converter modules of size D5 are connected to one phase only. Fans for converter modules of sizes D6 and D7 are connected to all three phases.
- The 9th column shows the needed cooling air volume per hour.
- The 10th column shows the losses.
- The last column shows the frame size.

## Hardware D5

### Location of hardware



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**ABB**

This slide shows the location of the busbars for a converter module size D5.

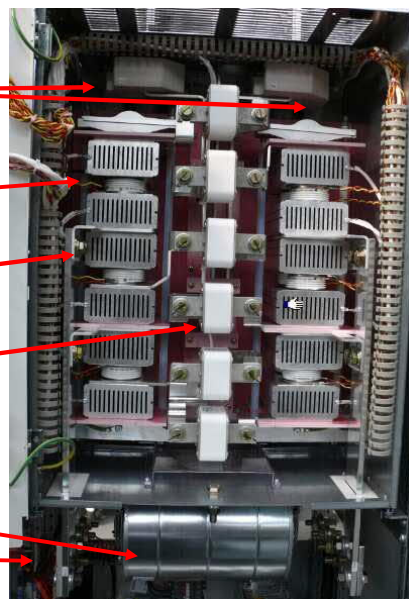
The three AC busbars are located at the top of the converter module.

The two DC busbars are located at the bottom of the converter module.

## Hardware D5

### Location of hardware

- Current Transformers (CT's) and AC busbars
- Power stack with:
  - Thyristor,
  - Heatsink and
  - Branch fuse
- Converter fan
- DC busbar



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**ABB**

This slide shows the location of the hardware in the power stack.

The two current transformers and the three AC busbars are located at the top of the converter module.

The power stacks with the thyristors, heatsinks and the branch fuses sits in the middle of the converter module.

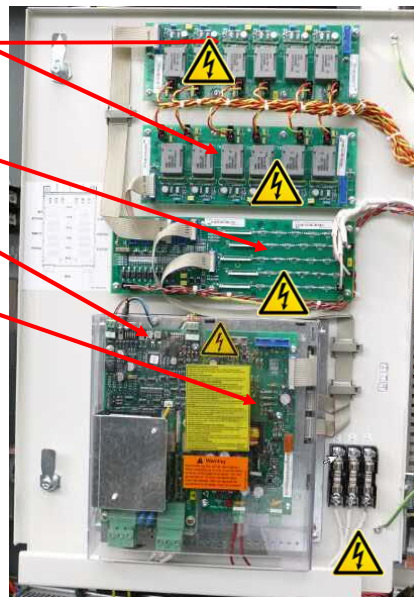
For cooling purposes, the fan unit is mounted at the bottom of the drive. Thus, the cooling air is blown into the converter via the snubber resistors lead through the slots of the heatsinks and then to the air outlet at the top front.

The two DC busbars are located at the bottom of the converter module.

## Hardware D5

### Location of hardware:

- Firing pulse boards (SDCS-PIN-48)
- Voltage and current measuring board (SDCS-PIN-51)
- Internal field exciter (FEX-425-Int)
- Power supply (SDCS-POW-4)
- Fuses for internal field exciter
- Control board (SDCS-CON-4) and DCSTLink board (SDCS-DSL-4) on other side of the electronic tray



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**ABB**

This slide shows the location of the hardware in the drive control.

The firing pulse boards are located on top of the inner side of the module door. For a 2-Q drive only one firing pulse board is needed. For a 4-Q drive two firing pulse boards are needed. The modules size D5 contain normal disk type thyristors using firing pulse boards SDCS-PIN-48.

Located underneath the firing pulse boards is the voltage and current measuring board SDCS-PIN-51. The SDCS-PIN-51 is always used together with the SDCS-PIN-48. On the SDCS-PIN-51 board are the circuits located which are needed for current, voltage and temperature measuring and for hardware coding.

If selected by its plus code +S164 the internal field exciter FEX-425-Int is located on the left-hand side of the electronic tray under the plastic cover. It can supply motor field currents up to 25 ADC. The necessary fuses for the field are supplied as well. The field exciter's line reactor is located externally.

Located next to the optional field exciter on the electronic tray is the SDCS-POW-4. It is designed for DCS800 converter modules D5 to D7. The SDCS-POW-4 works on a switched mode basis in fly back configuration. It generates all necessary DC voltages for all electronic boards of the converter module.

The control board SDCS-CON-4. and the DCSTLink board SDCS-DSL-4. are mounted on the opposite side of the electronic tray.

Attention!

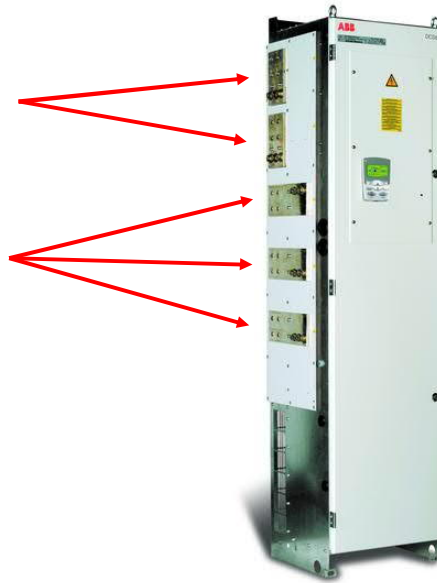
Caution must be considered when working at the D5 module, since line potential is existing on the boards and fuses!

## Hardware D6

### Location of hardware

- DC busbars

- AC busbars



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**ABB**

This slide shows the location of the busbars for a converter module size D6. All busbars are located on the left-hand side of the module. Adaption busbars for cable connection are available as option.

The two DC busbars are located at the top of the converter module.

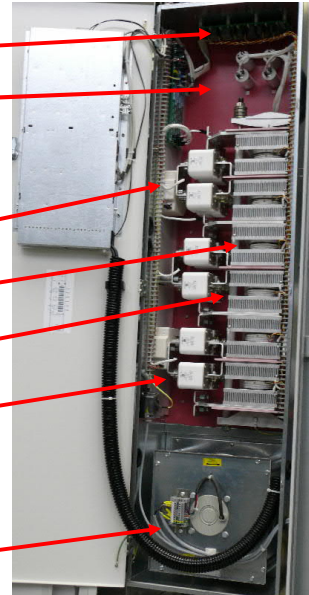
The three AC busbars are in the middle of the converter module.



## Hardware D6

### Location of hardware

- Firing pulse boards (SDCS-PIN-48 or SDCS-PIN-46)
- Snubber capacitors
- Voltage and current measuring board (SDCS-PIN-51)
- Current Transformer (CT) and AC busbar
- Power stack with:
  - Thyristor,
  - Heatsink and
  - Branch fuse
- Cooling air pressure switch and measurement of air input temperature
- Converter fan



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**ABB**

This slide shows the location of the hardware in the power stack.

The firing pulse boards are located under the top of the module frame. For a 2-Q drive only one firing pulse board is needed. For a 4-Q drive two firing pulse boards are needed. The modules size D6 contain either normal disk type thyristors using firing pulse boards SDCS-PIN-48 or BCT's using firing pulse boards SDCS-PIN-46. BCT's or Bidirectional-Controlled-Thyristors are two anti-parallel thyristors in one disk type housing with two gates.

The capacitors of the snubber circuit for each thyristor are located here. The resistors are in the back side of the D6 module.

Located at the left side of the module frame is the voltage and current measuring board SDCS-PIN-51. The SDCS-PIN-51 is always used together with SDCS-PIN-46 or SDCS-PIN-48 board. On the SDCS-PIN-51 board are the circuits located which are needed for current, voltage and temperature measuring and for hardware coding.

The two current transformers and the three AC busbars are located on the side of the converter module.

The power stack with the thyristors, heatsinks and the branch fuses sits in the middle of the converter module.

Any changes in the cooling air temperature and volume have to be detected.

To measure the cooling air entry temperature a PTC is used. The PTC's resistance change proportional to the temperature is acquired and evaluated in the unit's software. If the temperature rises above the preset value, then first an alarm is generated and - if the temperature continues to rise - a fault.

Since the cooling air volume can only be detected indirectly, a differential-pressure switch has been installed at the unit's housing. If the differential pressure is too low a fault is generated.

For cooling purposes, the fan unit is mounted at the bottom of the drive. Thus, the cooling air is blown into the converter then through the slots of the heatsinks and via the snubber resistors to the air outlet at the back of the top.

## Hardware D6

### Location of hardware:

- Power supply (SDCS-POW-4)
- Control board (SDCS-CON-4)  
underneath the intermediate  
cover
- Communication board (SDCS-  
COM-8)
- DCSLink board (SDCS-DSL-4)



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**ABB**

This slide shows the location of the hardware in the drive control.

The SDCS-POW-4 is located on top of the electronic tray. It is designed for DCS800 converter modules D5 to D7. The SDCS-POW-4 works on a switched mode basis in fly back configuration. It generates all necessary DC voltages for all electronic boards of the converter module.

The control board SDCS-CON-4 is mounted underneath the intermediate cover which is used to protect the sensitive drives electronic against electrostatic discharge when plug in options are used in slots 1 to 4.

The communication board SDCS-COM-8 is a plug-in option for slot 4. It is the interface to the ABB fiber optic world.

The DCSLink board SDCS-DSL-4 is a piggyback board mounted directly on the SDCS-CON-4.

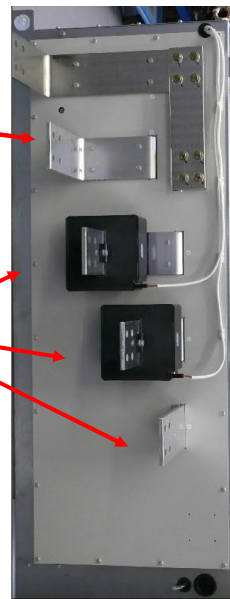
Attention!

Caution must be considered when working at the D6 module, since line potential is existing on this board!

## Hardware D7

### Location of hardware:

- DC busbars
- Current Transformers (CT's) and AC busbars



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**ABB**

This slide shows the location of the busbars for a converter module size D7. Depending on the configuration of the converter module all busbars are either located on the left-hand side or the right-hand side of the module.

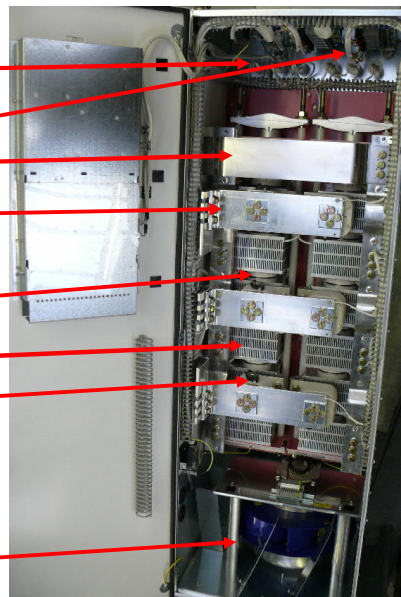
The two DC busbars are located at the top of the converter module.

The three AC busbars are in the middle of the converter module.

## Hardware D7

### Location of hardware

- Voltage and current measuring board (SDCS-PIN-51)
- Snubber capacitors
- Firing pulse boards (SDCS-PIN-48)
- DC busbar
- AC busbar
- Power stack with:
  - Thyristor,
  - Heatsink and
  - Branch fuse
- Cooling air pressure switch and measurement of air input temperature
- Converter fan



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**ABB**

This slide shows the location of the hardware in the power stack.

Located at under the top of the module frame is the voltage and current measuring board SDCS-PIN-51. The SDCS-PIN-51 is always used together with SDCS-PIN-48 board. On the SDCS-PIN-51 board are the circuits located which are needed for current, voltage and temperature measuring and for hardware coding.

The capacitors of the snubber circuit for each thyristor are located here. The resistors are located in the back side of the D6 module.

The firing pulse boards are located under the top of the module frame. For a 2-Q drive only one firing pulse board is needed. For a 4-Q drive two firing pulse boards are needed. The modules size D7 contain normal disk type thyristors using firing pulse boards SDCS-PIN-48.

The two DC busbars are located at the top of the converter module.

The three AC busbars are located in front of the power stacks.

The power stacks with the thyristors, heatsinks and the branch fuses sits in the middle of the converter module.

Any changes in the cooling air temperature and volume have to be detected.

To measure the cooling air entry temperature a PTC is used. The PTC's resistance change proportional to the temperature is acquired and evaluated in the unit's software. If the temperature rises above the preset value, then first an alarm is generated and - if the temperature continues to rise - a fault.

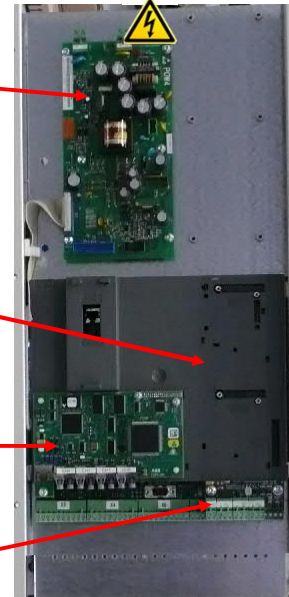
Since the cooling air volume can only be detected indirectly, a differential-pressure switch has been installed at the unit's housing. If the differential pressure is too low a fault is generated.

For cooling purposes, the fan unit is mounted at the bottom of the drive. Thus, the cooling air is blown into the converter then through the slots of the heatsinks and via the snubber resistors to the air outlet at the back of the top.

## Hardware D7

### Location of hardware

- Power supply (SDCS-POW-4)
- Control board (SDCS-CON-4)  
underneath the intermediate  
cover
- Communication board  
(SDCS-COM-8)
- DCSLink board (SDCS-DSL-4)



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**ABB**

This slide shows the location of the hardware in the drive control.

The SDCS-POW-4 is located on top of the electronic tray. It is designed for DCS800 converter modules D5 to D7. The SDCS-POW-4 works on a switched mode basis in fly back configuration. It generates all necessary DC voltages for all electronic boards of the converter module.

The control board SDCS-CON-4 is mounted underneath the intermediate cover which is used to protect the sensitive drives electronic against electrostatic discharge when plug in options are used in slots 1 to 4.

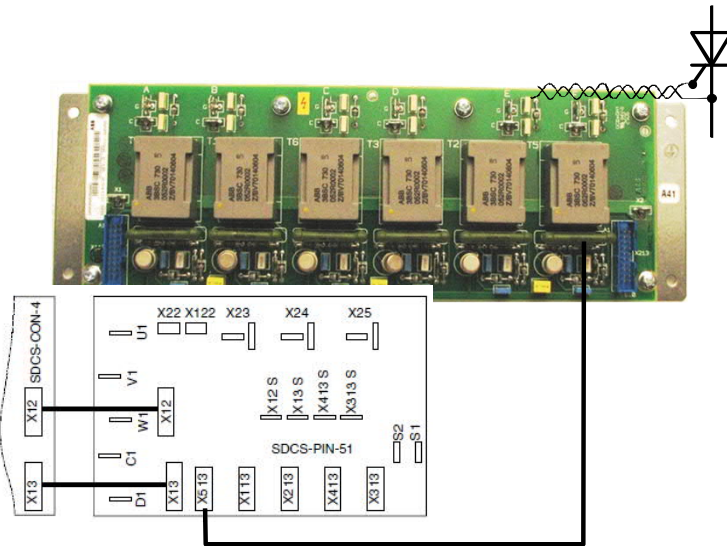
The communication board SDCS-COM-8 is a plug-in option for slot 4. It is the interface to the ABB fiber optic world.

The DCSLink board SDCS-DSL-4 is a piggyback board mounted directly on the SDCS-CON-4.

Attention!

Caution must be considered when working at the D7 module, since line potential is existing on this board!

## SDCS-PIN-46 and SDCS-PIN-48 location



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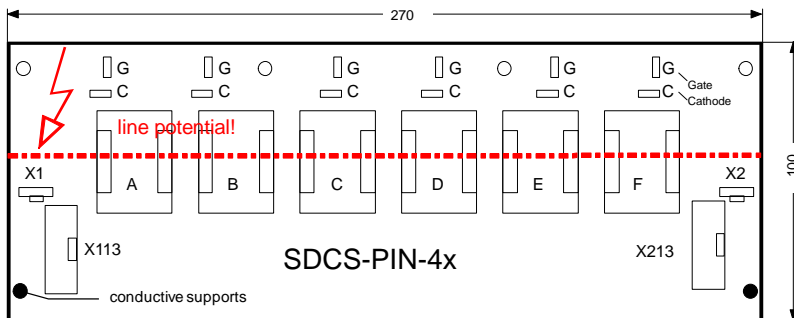
ABB

The firing pulse boards SDCS-PIN-46 or SDCS-PIN-48 are connected between the thyristors and the voltage and current measuring board SDCS-PIN-51.

For a 2-Q drive only one firing pulse board is needed. For a 4-Q drive two firing pulse boards are needed.

The module size D5 and D7 using only firing pulse boards of type SDCS-PIN-48. The modules size D6 contain either normal disk type thyristors using SDCS-PIN-48 or BCT's using firing pulse boards SDCS-PIN-46. BCT's or Bidirectional-Controlled-Thyristors are two anti-parallel thyristors in one disk type housing with two gates.

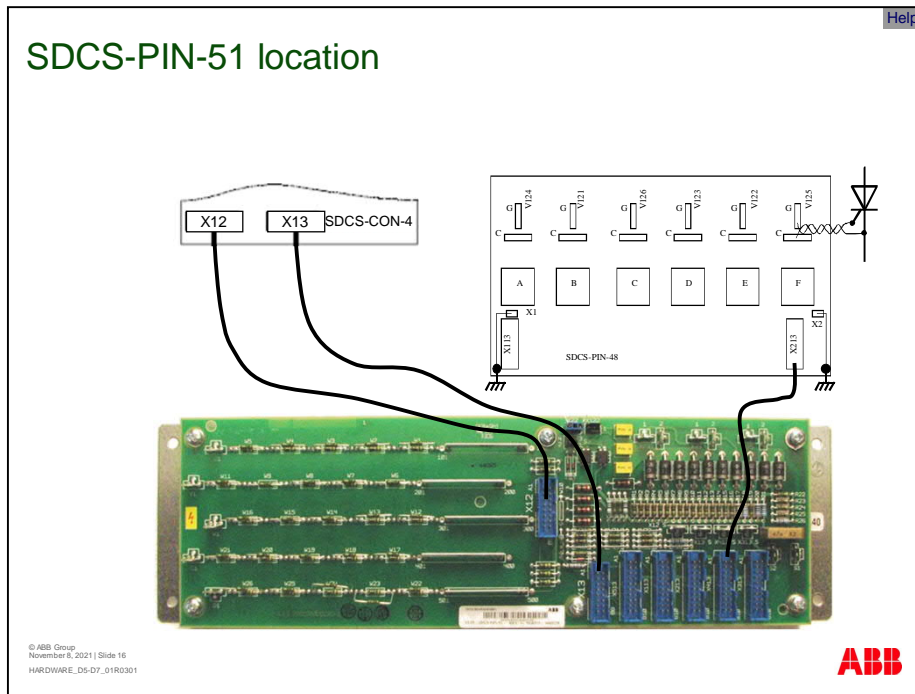
## SDCS-PIN-46 and SDCS-PIN-48 function



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ABB

The firing pulse transformers A to F with amplifiers are located on the SDCS-PIN-46 and SDCS-PIN-48 to provide the firing pulses for the gates of the thyristors. Caution has to be taken into account when working with this board, since the firing pulse cables are also connected to the cathodes of the thyristors so that line potential is existing on the board.



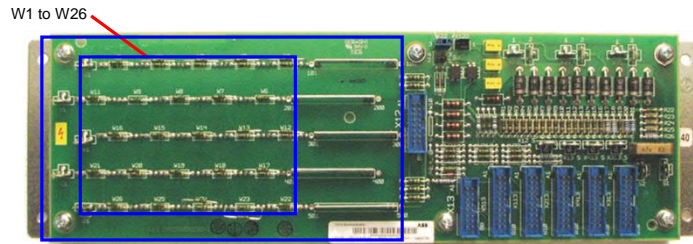
The voltage and current measuring board SDCS-PIN-51 is connected between the firing pulse boards SDCS-PIN-46 or SDCS-PIN-48 and the control board SDCS-CON-4.

The SDCS-PIN-51 is used for

- the voltage measurement on the AC- and DC-side,
- the voltage scaling,
- the current measurement since the current transformers are connected here,
- the scaling of the burden resistors,
- the sorting of firing pulses for the different converter modules D5, D6 and D7 and
- temperature supervision of the converter module.



## SDCS-PIN-51 voltage Nominal voltage scaling on the SDCS-PIN-51 board



- The scaling is done by cutting jumpers

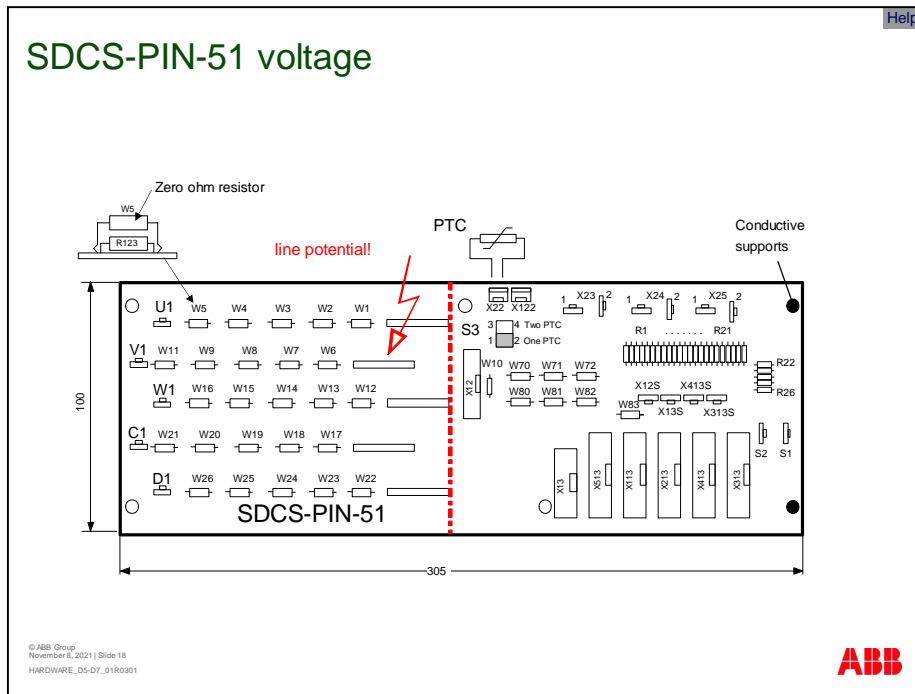
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**ABB**

The high resistance voltage measurement of the incoming voltage and the DC voltage is located on the left-hand side of the SDCS-PIN-51.

To scale the voltage measurement circuit the jumpers W1 to W26 over the measurement resistors are cut. This is done in the factory according to the type code of the converter module. Thus, no further adaption for commissioning of standard converter modules is needed.

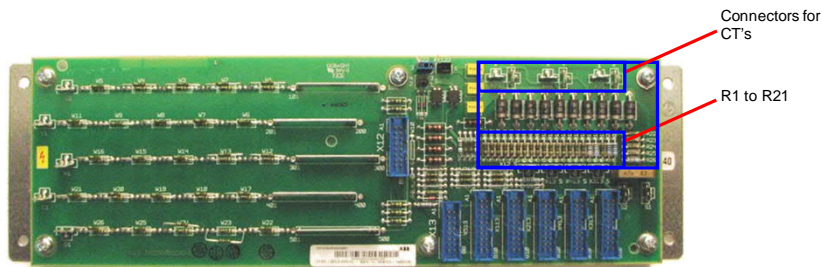
## SDCS-PIN-51 voltage



Caution must be considered when working with this board, since both incoming voltage and the DC voltage are connected thus line potential is existing on the board.

## SDCS-PIN-51 current

### Nominal current scaling on the SDCS-PIN-51 board



- The scaling is done by cutting resistors
- The nominal converter current  $I_{dN}$  is equivalent to 1.5 V across the nominal current burden resistors (R1 to R21)
- The current measurement is designed to handle peak currents  $I_{peak}$  up to two times  $I_{dN}$  (equivalent to 3 V)
- The zero current detection is done automatically (no cutting required)

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The current measurement including the connectors for the current transformers is located on the right-hand side of the SDCS-PIN-51.

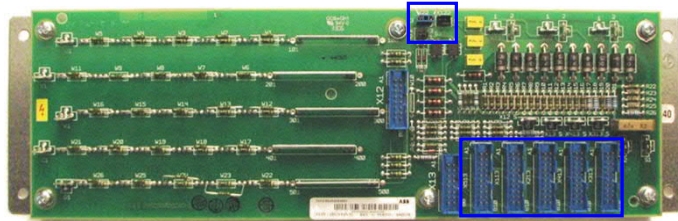
To scale the current measurement circuit resistors R1 to R21 are cut. This is done in the factory according to the type code of the converter module. Thus, no further adaption for commissioning of standard converter modules is needed. Additional information about the type code can be found in the firmware in group 4.

The cutting scales the converters nominal current to an equivalent of about 1.5 V over the burden resistor. To give the current measurement overload capability it is designed to handle peak currents up to an equivalent of 3 V over the burden resistor.

In the DCS800 the zero current detection is a firmware function and thus no hardware adaption is needed anymore.

## SDCS-PIN-51 additional functions

### Additional functions on the SDCS-PIN-51 board



- Sorting of firing pulses for the different converter modules D5, D6 and D7
- Temperature supervision

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The SDCS-PIN-51 provides some additional functions.

Depending on the converter module D5, D6 or D7 different routing of the firing pulses from the SDCS-CON-4 via the SDCS-PIN-51 to the SDCS-PIN-48 are needed. This sorting of the firing pulses is done by the connectors X113 to X513. These connectors are used for the flat cable to the SDCS-PIN-48.

The PTC for the temperature supervision of the converter module is connected at connectors X22 and X122.

# Summary

## Key points of this module are:

- Rating of DCS800 modules
- Components of a D5 module
- Components of a D6 module
- Components of a D7 module
- Function of PIN-51 board

## Key points of this module are:

- Rating of DCS800 modules
- Components of a D5 module
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## Additional information

- DCS800 Hardware Manual (3ADW000194)
- DCS800 Technical Catalogue (3ADW000192)

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